

# Technical Manual

**RWC**

**CUT.  
PUSH.  
DONE.**



AS 2492  
AS/NZS 2537



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## Plumbing Matters. We Make It Better.

SharkBite plumbing fittings and pipe are manufactured in Australia at RWC's state of the art facilities. Stringent quality control and advanced manufacturing procedures guarantee product satisfaction.

RWC manufactures, develops, assembles and delivers trusted plumbing solutions to businesses and households across Australia through these product lines and more.

Established in 1949, RWC has grown to become a world leader in water control, measurement, infrastructure, products and services, supplying hot water systems to manufacturers, plumbing distributors, government bodies, and other major industries. Our Australian-based NATA-accredited laboratory certifies final products prior to production and conducts ongoing performance and destructive testing. Accredited by Standards Australia to AS/NZS ISO 9001 – 2015, all manufactured products are subject to a comprehensive quality assurance system, encompassing design, manufacturing and testing to ensure that every RWC product is a trusted plumbing solution for years to come.

SharkBite push-to-connect fittings for PEX were introduced in Australia in 1999, with SharkBite Copper fittings introduced in 2004. This innovative system was introduced to the North American market in 2004 and the UK in 2014.

With standards approvals granted on three continents, the design of SharkBite has proven itself many times, and has made RWC and SharkBite world-leaders in push-to-connect plumbing solutions.



## System Description

SharkBite is an advanced design push-to-connect plumbing system for potable and non-potable recycled water distribution. SharkBite is available in an assortment of over 200 fittings and PEX pipe ranging from 16–25mm size. SharkBite has been engineered with ease of use and disconnection in mind and while being the most dependable way to join copper and PEX Pipe in any combination – with no soldering, clamps, unions or glue.

## System Benefits

- Instant push-to-connect connection. Cut. Push. Done.
- No soldering, clamps, unions or glue required
- No expensive joining tools or ongoing tool maintenance
- Reduces installation time with no tightening of nuts, clamps and unions
- Integral tube liner for PEX installations means no loose components and ensures a secure, reliable connection
- The position of the O-Ring and grab ring allow for the immediate detection of leaks
- Can be installed wet or dry
- Rotatable during installation
- Approved for behind the wall and underground application
- Removable after installation
- Clean, professional installation
- Quality engineered and manufactured in Australia
- Compact, robust DZR brass body is strong, corrosion resistant and durable
- SharkBite PEX Pipe is pre-gauged with 'Safe-Seal Indicator Markings' to aid correct installation
- Fittings supplied ready for installation
- Transition fittings to Cu, SDR7.4 PEX, other SDR9 PEX & PB
- No product waste; simply disconnect and reuse

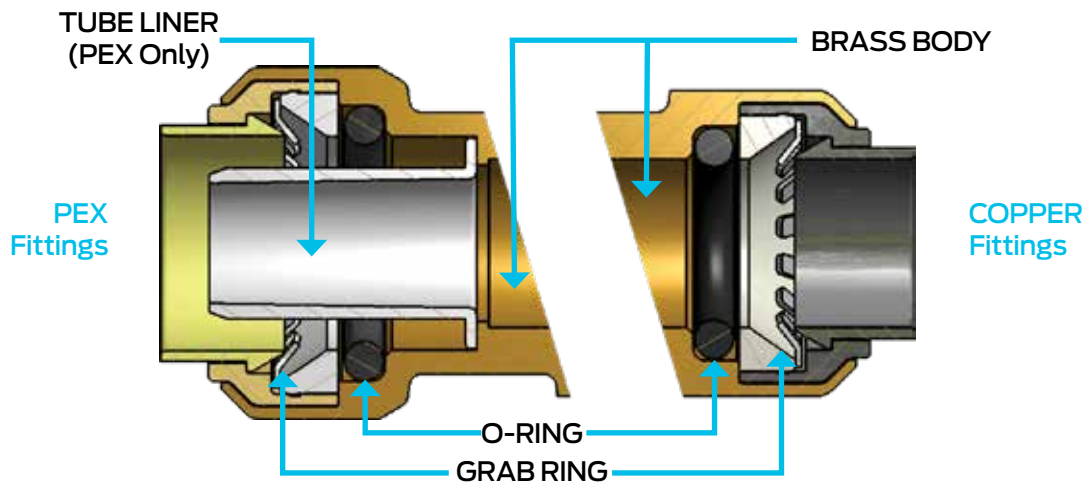
## Plumbing System Comparison

Feature	Push-To-Connect SharkBite	Crimp	Expansion
No tools required	✓	✗	✗
No calibration/maintenance required for proper function of the tool	✓	✗	✗
No grooves in the tubing caused by the expansion tool that can create potential leak paths	✓	✓	✗
No potential for leaks caused by nicks on the fitting exterior	✓	✗	✗
Fitting manufactured in Australia	✓	✗	✗
Easy install with minimal learning curve for new labourers	✓	✗	✗
Reusable during installation – no wasted products	✓	✗	✗
Fitting factory assembled, ready to install from the bag	✓	✓	✗



## The SharkBite Design

The SharkBite Fitting incorporates a number of unique and patented features.



## Materials

<b>Body</b>	DZR Brass
<b>Grab Ring</b>	316 Stainless Steel
<b>O-Ring</b>	EPDM
<b>Tube Liner</b>	Polysulfone(PEX fittings only)

SharkBite push-to-connect (PTC) fittings are made from Dezincification Resistant Brass (DZR) and are available in 200+ configurations including Couplings, Elbows, Tees, Reducers, Threaded Adaptors, Caps, Breeches, Ball Valves, Tempering Valves and Copper Slip Repair Couplings plus Conversion Couplings and Tees to Cu, SDR7.4 PEX, other SDR9 PEX and PB.

All SharkBite PEX fittings come with a pre-installed tube liner. It is an AS/NZS 3500 requirement when using Push-To-Connect fittings on PEX pipe. Tube liners are not required on copper fittings.

## Cross-Linked Polyethylene

SharkBite Crosslinked Polyethylene is extruded as a PEXb pipe and manufactured using the silane or 'moisture cure' method and is made in a two stage simple process.

1. Silane grafted polyethylene is combined with a catalyst and extruded into PEXb pipe.
2. The cross linking process is then performed by exposing the pipe to steam.

The moisture cure process of cross linking PEXb pipe enhances pipe performance properties including strength, temperature, chemical resistance, crack, creep and abrasion resistance, pipe flexibility, pressure rating, expansion and contraction.

Additionally SharkBite Crosslinked Polyethylene is made using a PEX100 raw material which provides the benefits of an SDR9 pipe wall, improved flow rates, and a pressure rating equivalent to a SDR7.4 pipe.

## SharkBite PEX Pipe

SharkBite PEX pipe is an SDR9 PEXb pipe available in sizes 16, 20 and 25mm in coils and straights with over 30 variations from 5m lengths to 100m coils, in a variety of different colour codes according to AS 2492 and the relevant applications.



### Mustard Pipe

Mustard Pipe is typically used for Potable Water but can also be used for hot water installations.



### Red Pipe

Red Pipe is for hot water application only.



### Purple Pipe

Purple Pipe is coloured and branded specifically for Recycled Water applications in accordance with the authorities' requirements for the distribution of water not suitable for human consumption. This water is generally used for watering gardens and supply to cisterns.



### Green Pipe

Green Pipe is available for rainwater applications.

## Precautions

### Chemicals

Always check with RWC before using SharkBite PEX pipe for applications other than for potable water. Additionally, check with RWC if pipework is to be installed in a known contaminated area, in contaminated soils or where chemical spills may have occurred.

### Electrical

It is of the utmost importance that if a metallic pipe is being replaced or installed in part or in its entirety by a plastic pipe or other non-metallic fittings or couplings, the requirements of AS/NZS 3500 must be followed. Additionally, copper tube connected to a SharkBite fitting does not guarantee electrical continuity. No work should be carried out until the earth requirements have been checked by an electrical contractor and modified if necessary.

## PEX Dimensions

NOMINAL OUTSIDE DIAMETER	16.0	20.0	25.0
Average wall thickness	2.15	2.45	3.00
Average internal diameter	11.7	15.2	19.1

# The Benefits of SharkBite



## Australian Made and Owned

SharkBite fittings and pipe are manufactured in Australia in Reliance Worldwide Corporation (Aust.) Pty. Ltd. state of the art facilities. Stringent quality control and advanced manufacturing procedures guarantee product satisfaction.



## 25 Year Warranty\*

The SharkBite range of fittings and PEX pipe can be relied upon to perform year after year. SharkBite is backed by Reliance Worldwide Corporation (Aust.) Pty. Ltd. 25 year warranty.



## Versatile and Reusable

Can be easily disconnected using SharkBite disassembly clips. Fittings can be rotated once installed allowing for a more versatile install, especially in confined spaces. This feature is particularly useful where repairs and or maintenance are required.



## Quick and Easy

SharkBite is quick and easy to install, making it the most time effective plumbing system available, allowing the installer to move onto the next job faster than ever before.

Utilising state of the art push-to-connect design, the SharkBite system is easily assembled by hand.



## SharkBite System Conversion

SharkBite offers a range of conversion fittings that adapt to existing SDR 7.4, SDR 9, Polybutylene and Copper piping systems.



## Standards Approved

SharkBite fittings and PEX Pipe comply with and are approved to Australian Standards AS/NZS 2537 and AS 2492 respectively.



Visit [sharkbite.com.au](http://sharkbite.com.au) for further information on SharkBite warranty.

## Approved Applications

The SharkBite system has WaterMark certification to AS/NZS 2537 & AS 2492 product standard for use in potable water. SharkBite plumbing systems are approved for hot and cold potable water installations above and below ground.

Please consult with local codes for final approval. Failure to comply with the above types of pipe applications could result in connection failures.

### REFERENCES

- A. AS/NZS 4020 – Testing of products for use in contact with drinking water.
- B. AS 2492 – Cross-linked polyethylene (PEX) pipes for pressure applications.
- C. AS/NZS 2537 – Mechanical jointing fittings for use with cross-linked polyethylene (PEX) pipe for hot and cold water applications.
- D. AS 3688 – Water supply – metallic fittings and connectors.
- E. AS 1432 – Copper tubes for plumbing, gas fittings and drainage applications.
- F. AS 2345 – Dezincification resistance of copper alloys.
- G. AS/NZS 3500 – National plumbing and drainage.

## Potable Water Approved AS/NZS 4020

AS/NZS 4020 prescribes tests for analysing the suitability of products for use in contact with drinking water, with regard to their effect on the quality of the water. It is a requirement of Watermark Certification.

## Environment

We recognise that environmental impacts are increasingly important to our stakeholders and to society more broadly. RWC actively manages its consumption of energy, water and raw materials for manufacturing and packaging to mitigate our impact on the environment.

RWC supports local and global efforts to combat climate change and strives for a sustainable low carbon future. Our efforts are aligned with the UNFCCC Paris agreement which is focused on reducing emissions to limit global warming to a 1.5°C increase from pre-industrial level.

## Water Quality and Chlorine

Potable water is sourced using a variety of methods. The Australian Drinking Water Guidelines provides a framework to govern potable water. To achieve this, chlorine and other agents are sometimes used as constituents of the water or for commission purposes.

The SharkBite plumbing system is compliant and certified to AS/NZS 2537 and AS 2492 and as such all components of the system have been certified to AS/NZS 4020. RWC can confirm, based on the AS/NZS 4020 certification that the SharkBite system does not cause any multiplication of micro-organisms, microbial contamination, or legionella growth.

RWC recommend that an independently accredited provider is engaged to undertake any chemical flush of the system and that this work is carried out in line with the relevant Standards. Chemical flushing is to be done in line with the Australian Drinking Water Guidelines that prohibits flushing potable plumbing systems with a solution greater than 5ppm of chlorine and within the normal operating temperatures and pressures as specified in the SharkBite Technical Literature. If chemical flushing with a high concentration solution of chlorine is conducted incorrectly it will have a detrimental effect on any piping system. Dosing must be done in such a way as not to exceed the 5ppm chlorine level in any part of the plumbing system.

## Acoustic Tests

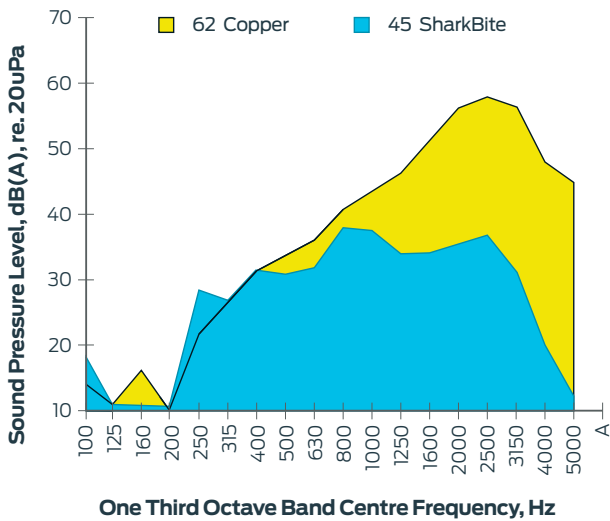
### Results Summary

- The noise emitted by the pipes through the wall was mainly evident in the mid to high frequencies of the A-weighted spectrum.
- Noise emitted at frequencies below 250Hz was affected by the level of background noise in the room.
- The change in radiated noise level was greater with the change in water flow compared with the change in water pressure.
- In all cases the overall noise level emitted by the SharkBite pipe was less than for the copper pipe. For the same flow conditions the differences in overall noise level between the pipes was between 14 and 17dB(A).

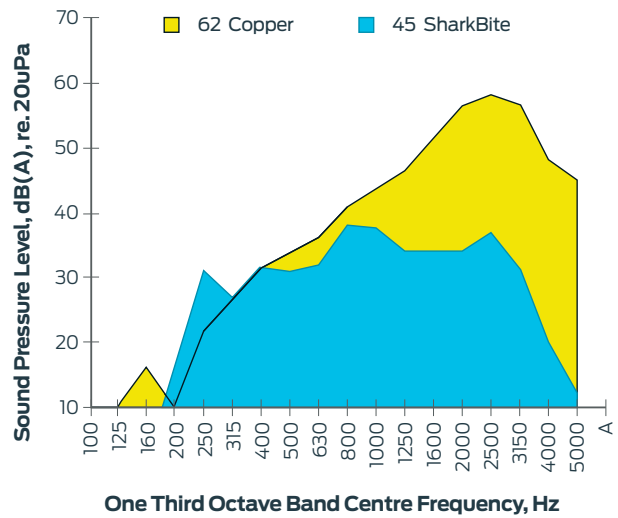
### Conclusion

Measurements of noise emitted from nominal 15mm bore pipes attached to the other side of a concrete block wall with water flowing through them and a noise source in the pipe showed that the SharkBite cross-linked polyethylene pipe was between 14 and 17dB(A) quieter than the standard copper pipe.

WATERFLOW (l/min)	WATER PRESSURE (kPa)	MEASURED NOISE LEVEL dB(A)		DIFFERENCE dB(A)
		SHARKBITE	COPPER	COPPER - SHARKBITE
15	300	38	55	17
15	600	40	54	14
20	600	45	62	17
20	700	45	62	17



Measured noise level of water flow through nominal 15mm bore SharkBite and copper pipe, 20L/min, 600kPa with DIN 52218 noise source.



Measured noise level of water flow through nominal 15mm bore SharkBite and copper pipe, 20L/min, 700kPa with DIN 52218 noise source.



## UV Resistance

SharkBite pipe should not be installed in direct or reflected sunlight as the material may degrade with extended UV exposure. Where external installation is required, install the SharkBite pre-conduited product or provide other similar UV protection.

## SharkBite Burial

SharkBite fittings are suitable for burial in most applications; however care is required when using fittings in applications that require burial to ensure the correct installation practices are used and due care is given to any environmental factors that may have a detrimental effect on the life expectancy of the fittings and pipe.

The installation of SharkBite fittings that require burial or chasing into concrete or brickwork, must comply with all local plumbing code requirements. SharkBite fittings are not suitable for use in areas where the soil is or may become contaminated\* including the soil used for back filling. It is recommended that all SharkBite fittings have an impervious barrier between the fitting and the surrounding soil (*RWC Silicone Burial Wrap*).

The soil used for back filling must be free of rocks, debris or any sharp objects that may cause damage to the fitting or pipe through impact or abrasion.

*\* Examples of contamination include, but are not limited to: petrochemicals (reclaimed service station sites), high levels of nitrogen compounds (this could be caused by animal waste or fertilizer that may be found in some agricultural applications), low pH levels (below pH 6), high pH levels (above pH 8), run off from land fill, formaldehyde compounds, and solvents. It should be noted that such contaminants have been known to migrate through plastic piping systems and contaminate the Potable water supplied through these pipes.*

## RWC Silicone Burial Wrap

When using RWC Silicone Burial Wrap, make a SharkBite connection ensuring pipe is inserted correctly in the fitting (see Installation Instructions in this manual for details). While leaving the protective film in place, measure the amount of tape needed to completely wrap the fitting. To ensure a proper seal, overlap tape by 25mm past the end of the fitting on every end and 5mm – 10mm between/across the fitting.

Completely cover the fitting by wrapping (overlapping each edge of the tape) the fitting, pulling the tape tight and removing the protective film. The tape will bond to itself within minutes and form an impervious barrier within a few hours.

## Uncontrolled Heat Sources

In the case of uncontrolled heat sources (eg. Slow combustion stoves, water heating coils, wet back boilers, solar, or similar) SharkBite PEX pipe should not be used. The primary flow and returns on these types of heaters should not be installed in SharkBite PEX pipe. Secondary flow and returns must be controlled so that the temperature / pressure requirements are not exceeded.

In the interest of safe temperature and to protect the user, tempering valves should be installed in accordance with AS/NZS3500.

When using solar systems, installers should consult with manufacturers to ensure that water leaving the storage facilities does not exceed the performance capabilities of the pipe. Primary flow and returns should not be installed in SharkBite PEX pipe and secondary flow and returns must be controlled.



## Water Quality and Chlorine

Potable water is sourced using a variety of methods. The Australian Drinking Water Guidelines provides a framework to govern potable water. To achieve this, chlorine and other agents are sometimes used as constituents of the water. Chlorine levels within the levels of the Australian Drinking Water Guidelines are in most cases suitable in standard discontinuous flow applications. For continuous flow applications such as circulating hot water lines a maximum chlorine level of 1.2ppm must be maintained.

Water pH levels must be greater than 7.5. Should the installer have concerns relating to water chemistry including chlorine levels for a particular site or application they should contact RWC for further information.

## Disinfection of Plumbing System

The SharkBite plumbing system is compliant and certified to AS/NZS 2537 and AS 2492 and as such all components of the system have been certified to AS/NZS 4020. RWC can confirm, based on the AS/NZS 4020 certification that the SharkBite system does not cause any multiplication of micro-organisms, microbial contamination. RWC recommend that an independently accredited provider is engaged to undertake any thermal disinfection or chemical flush of the system and that this work is carried out in line with the relevant Standards. Chemical flushes must be limited to a maximum of 5 occurrences over the system lifetime and records must be maintained showing when disinfection took place, what process was followed and who undertook the disinfection works.

Chemical flushing is to be done in line with the Australian Drinking Water Guidelines. The guidelines prohibit flushing potable plumbing systems with a solution greater than 5ppm of chlorine and within the normal operating temperatures and pressures (as specified in the SharkBite Technical Literature). If chemical flushing with a high concentration solution of chlorine is conducted incorrectly it will have a detrimental effect on any piping system. Dosing must be done in such a way as not to exceed the 5ppm chlorine level in any part of the plumbing system. Thermal disinfection processes must be conducted within the normal operating conditions of the SharkBite plumbing system.

## Installation Considerations

- Keep SharkBite PEX pipe at a minimum of 500mm from sources of high heat such as heating appliances (e.g. flues)
- Keep SharkBite PEX pipe 1500mm from slow combustion type stoves (wet back type).
- Leave 300mm minimum space between SharkBite PEX pipe and recessed electric light fittings.
- SharkBite PEX pipe should not be positioned within 150mm of gas or central heating vents or flues.
- Where fire collars or the like are required, installers should contact the manufacturer of those products to ensure they have certification for use with PEX pipes.

## Minimum Cold Bending Radii

DIAMETER	RADII
16mm	160mm
20mm	200mm
25mm	250mm

*Ten times the outside diameter of the pipe used*

Bending of the SharkBite PEX pipe for change of direction is preferable to elbows, however fittings will be required where sharp bends are necessary. Tighter bends can be achieved by using a bend support.

Note: Do not use pipes that have kinks, cuts, deep scratches, squashed ends, imperfections or have been in contact with grease or tar substances. Any of the above should be cut out and replaced, as these conditions may affect the integrity of the SharkBite system.

## Clipping

AS/NZS 3500 recommend the following spacings:

Diameter	Horizontal	Vertical
16mm	600mm	1200mm
20mm	700mm	1400mm
25mm	750mm	1500mm

The above is a guide only. Good plumbing practice requires that clipping be installed so that stress is not imposed on the joint. When bending close to a joint, clips should be placed near the fitting in a manner not to stress the joint.

## Timber & Steel Frames

Drill holes through studs, plates etc. large enough so that the SharkBite pipe can move freely to allow for expansion and contraction and pressure surges.

Holes drilled or formed in metal studs or plates must be accurately sized to enable suitable grommets. Insulation or a short sleeve of oversize pipe should also be firmly secured in the framework to be inserted around the pipe. This helps to ensure that there is no direct contact between the pipe and framework and allows for movement of the pipe through the grommet, lagging or sleeve. To avoid noises where pipes pass through studs, plates etc. That have large holes, consideration should be given to the use of a non-aggressive compound, grommet or sleeve in the annular space in the stud or plat.

AS/NZS 3500 allows neutral cure silicone to be used around PE-X pipes to fill the annual space drilled through a stud or plate.

SharkBite fittings must be located away from stud penetrations or other abutments to ensure the fittings demount function is not engaged due to the effects of thermal expansion/contraction.

## Pipes In Chases, Ducts or Conduits

- SharkBite PEX pipes in chases must be continuously wrapped with an impermeable flexible material
- Ducts shall be fitted with removable covers
- Conduits embedded in walls or floors should conform to the requirements of the NCC or New Zealand Building Codes as applicable

Although water service pipes are not permitted to be embedded or cast directly into a concrete structure it is permissible for a water service pipe to be within a conduit and then embedded within a wall or floor of masonry or concrete construction.

*Refer to AS/NZS 3500 – 5.4.3*

## Under Concrete Slabs

Water pipes located beneath slabs on ground shall be laid on a compacted bed of sand or fine-grained soil with a minimum distance of 75mm between the top of the underside of the slab. Pipe work that penetrates the slab shall be at right angles to the slab surface and lagged the full length of the slab penetration with an impermeable flexible material not less than 6mm in thickness. Alternatively, an impermeable plastic sleeves or conduit providing equivalent protection.

Any joints located beneath a concrete slab should be kept to a minimum and fitting protection applied.

Refer to *SharkBite Burial* (page 8)

## Thermal Properties

PEX pipe will not melt. This is due to the irreversible cross-linking process which has changed the chemical structure of the base polyethylene.

PROPERTY	VALUE
Ignition Temperature °C	380
Specific Heat (J/kg/K)	2300
Density (g/cm <sup>3</sup> )	0.94
Thermal Expansion Coefficient (x10 <sup>-6</sup> /K)	14.22

## Thermal Expansion

The table below represents expansion and contraction of PEX pipe in millimetres, resulting from a given change in temperature. The graph and table are calculated using the following equation:

$$\text{Change in pipe length} = 0.1422 \times \text{Pipe length} \times \text{Change in temperature}$$

		CHANGE IN TEMPERATURE (°C)															
		10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
LENGTH OF PIPE IN METRES	1	1.4	1.7	2.0	2.3	2.6	2.8	3.1	3.4	3.7	4.0	4.3	4.6	4.8	5.1	5.4	5.7
	2	2.8	3.4	4.0	4.6	5.1	5.7	6.3	6.8	7.4	8.0	8.5	9.1	9.7	10.2	10.8	11.4
	4	5.7	6.8	8.0	9.1	10.2	11.4	12.5	13.7	14.8	15.9	17.1	18.2	19.3	20.5	21.6	22.8
	6	8.5	10.2	11.9	13.7	15.4	17.1	18.8	20.5	22.2	23.9	25.6	27.3	29.0	30.7	32.4	34.1
	8	11.4	13.7	15.9	18.2	20.5	22.8	25.0	27.3	29.6	31.9	34.1	36.4	38.7	41.0	43.2	45.5
	10	14.2	17.1	19.9	22.8	25.6	28.4	31.3	34.1	37.0	39.8	42.7	45.5	48.3	51.2	54.0	56.9
	12	17.1	20.5	23.9	27.3	30.7	34.1	37.5	41.0	44.4	47.8	51.2	54.6	58.0	61.4	64.8	68.3
	14	19.9	23.9	27.9	31.9	35.8	39.8	43.8	47.8	51.8	55.7	59.7	63.7	67.7	71.7	75.7	79.6
	16	22.8	27.3	31.9	36.4	41.0	45.5	50.1	54.6	59.2	63.7	68.3	72.8	77.4	81.9	86.5	91.0
	18	25.6	30.7	35.8	41.0	46.1	51.2	56.3	61.4	66.5	71.7	76.8	81.9	87.0	92.1	97.3	102.4
	20	28.4	34.1	39.8	45.5	51.2	56.9	62.6	68.3	73.9	79.6	85.3	91.0	96.7	102.4	108.1	113.8
	22	31.3	37.5	43.8	50.1	56.3	62.6	68.8	75.1	81.3	87.6	93.9	100.1	106.4	112.6	118.9	125.1
	24	34.1	41.0	47.8	54.6	61.4	68.3	75.1	81.9	88.7	95.6	102.4	109.2	116.0	122.9	129.7	136.5
	26	37.0	44.4	51.8	59.2	66.5	73.9	81.3	88.7	96.1	103.5	110.9	118.3	125.7	133.1	140.5	147.9
	28	39.8	47.8	55.7	63.7	71.7	79.6	87.6	95.6	103.5	111.5	119.4	127.4	135.4	143.3	151.3	159.3
	30	42.7	51.2	59.7	68.3	76.8	85.3	93.9	102.4	110.9	119.4	128.0	136.5	145.0	153.6	162.1	170.6
32	45.5	54.6	63.7	72.8	81.9	91.0	100.1	109.2	118.3	127.4	136.5	145.6	154.7	163.8	172.9	182.0	
34	48.3	58.0	67.7	77.4	87.0	96.7	106.4	116.0	125.7	135.4	145.0	154.7	164.4	174.1	183.7	193.4	
36	51.2	61.4	71.7	81.9	92.1	102.4	112.6	122.9	133.1	143.3	153.6	163.8	174.1	184.3	194.5	204.8	
38	54.0	64.8	75.7	86.5	97.3	108.1	118.9	129.7	140.5	151.3	162.1	172.9	183.7	194.5	205.3	216.1	
40	56.9	68.3	79.6	91.0	102.4	113.8	125.1	136.5	147.9	159.3	170.6	182.0	193.4	204.8	216.1	227.5	

## Thermal Insulation

R-Values of Common Plumbing Piping and Insulation. In certain areas, AS/NZS 3500 requires a minimum insulation of R=0.3. No current piping material will meet this requirement without suitable thermal insulation.

*"R-value = Thickness / Conductivity. See AS/NZS 3500 Section 8.6"*

	CONDUCTIVITY (K)W/M/K	OD mm	ID mm	WALL THICKNESS mm	R-VALUE K.M <sup>2</sup> /W
Air	0.02			6	0.300
Copper DN15	401	12.7	10.88	.91	0.0000023
Lagged Copper (Approx.)	Cu + Air + Plastic			~2	0.034
SharkBite PEX 16mm	0.35	16	11.6	2.2	0.006
SharkBite PEX 20mm	0.35	20	15.1	2.45	0.007
SharkBite PEX 25mm	0.35	25	18.6	3.2	0.009
E-Therm™	0.034			8	0.235
Requirement Of AS/NZS 3500 5.19 DN15	0.03			9	0.300
Requirement Of AS/NZS 3500 2003 Amendment 1 2005 (Table 8.1 & 8.2)	0.0433			13	0.300

## Operating Parameters – Pressure and Temperature

### SharkBite PEX SDR9 Pipe is manufactured to AS 2492

Designed to operate with a working pressure of 2000kPa at 20°C and can be operated at 70°C with a maximum working pressure of 1000kpa (see special conditions relating to Recirculating Systems on page 8).

Temperature above 70°C for any period will affect the life of the pipe.

Designated SharkBite connection can only be used on SharkBite PEX SDR9 Pipe.

The table below represents the working pressures of cross-linked polyethylene PN20 pipe at various pipe material temperatures (PMT) as per AS 2492.

TEMPERATURE	20°C	60°C	70°C
kPa	2000	1190	1000

## Fitting Pressure Loss

To calculate the pressure loss through a particular fitting, the type and diameter of the fitting and the flow rate must be established. The pressure loss may then be read from the vertical axis. To calculate the pressure loss through a number of fittings in a circuit, the number and type of fittings, along with the direction of flow must be known. The pressure loss through each fitting can then be added together to calculate a total pressure loss.

### Elbows – Head Loss In kPa Per Fitting

FITTING SIZE	FLOW RATES PER SECOND								
	1.0	3.5	11.9	21.2	33.1	47.6	64.8	84.7	107.1
16mm	1.0	3.5	11.9	21.2	33.1	47.6	64.8	84.7	107.1
20mm	0.3	1.0	4.3	7.6	11.9	17.2	23.4	30.5	38.6
25mm	0.1	0.4	1.8	3.2	5.1	7.3	9.9	13.0	16.4

### Straight Connectors – Head Loss In kPa Per Fitting

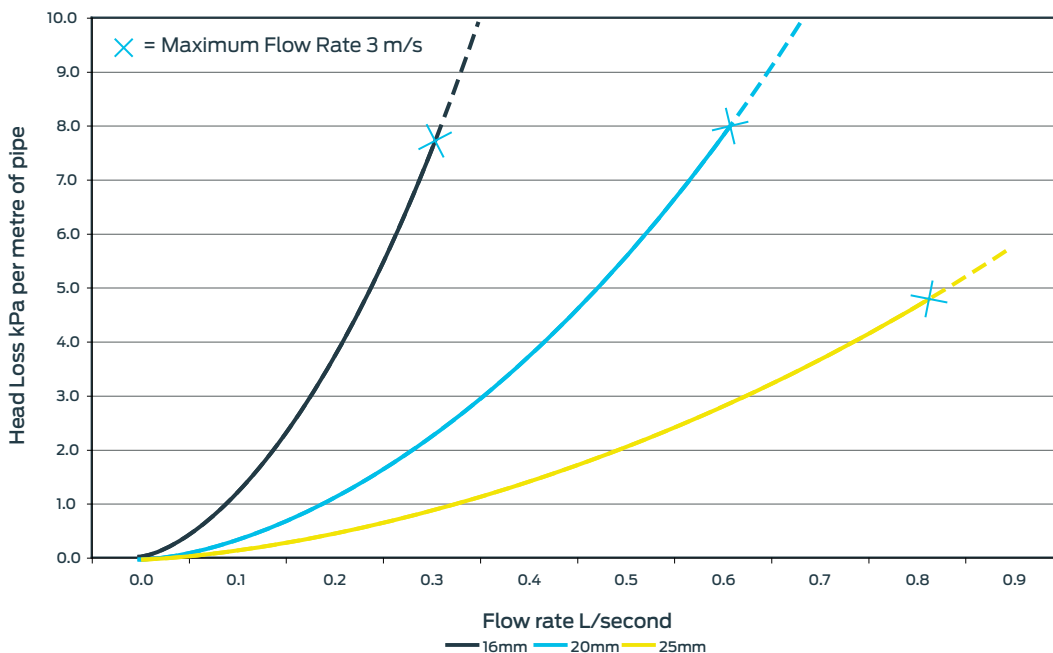
Due to the design of the SharkBite copper fitting, there is no significant pressure loss through a straight connection. Pressure loss is to be calculated as a straight length of tube.

FITTING SIZE	FLOW RATES PER SECOND								
	0.4	1.6	3.6	6.3	9.9	14.3	19.4	25.4	32.1
16mm	0.4	1.6	3.6	6.3	9.9	14.3	19.4	25.4	32.1
20mm	0.1	0.6	1.3	2.3	3.6	5.1	7.0	9.2	11.6
25mm	0.1	0.2	0.5	1.0	1.5	2.2	3.0	3.9	4.9

## Pressure or Head Loss Through PEX Pipe

This graph shows pressure loss through SharkBite PEX Pipe at various flow rates in 16mm and 20mm.

In order to calculate the pressure loss through the pipe, the given flow rate for a particular portion of tube must be established (this may be done using the table provided in AS/NZS 3500), along with the required pipe length and diameter. The pressure loss can then be read off the vertical axis.



Information provided here is theoretical and based on new clean pipe. No allowance has been made for age or any abnormal conditions of the interior surface of the pipe.

## Maximum Flow Rates

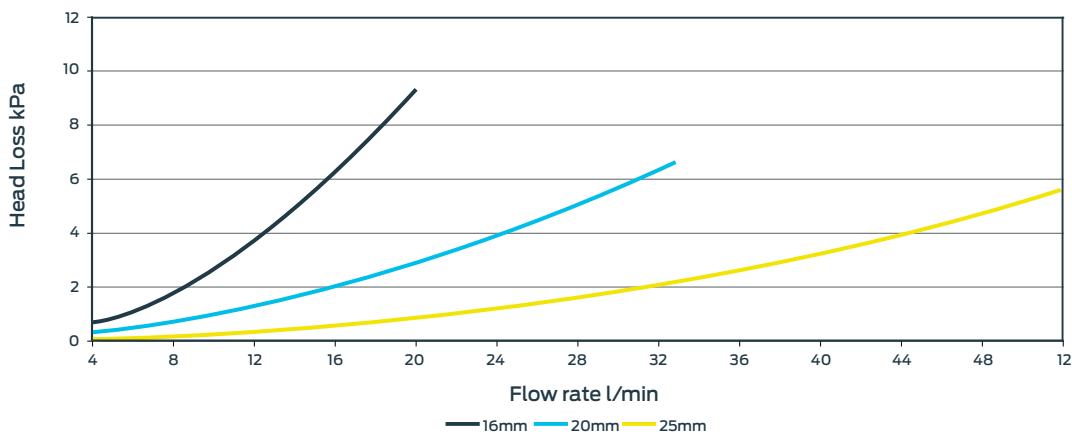
	SHARKBITE PEX PIPE SDR9			COPPER TUBE		
	16mm	20mm	25mm	DN15	DN20	DN25
MIN ID (MM)	11.5	15.0#	18.7	10.7	17.0	23
MAX FLOW (L/MIN)*	18.7	31.8	49.4	16.2	40.9	74.8
MAX FLOW (L/SEC)*	0.31	0.53	0.82	0.27	0.68	1.25

\* Based on AS/NZS 3500 maximum allowable velocity in pipe of 3m/s.

Based on its minimum ID of 15mm, 20mm SharkBite may be used where AS/NZS 3500 requires a nominal pipe size of DN20 (eg. Section 3.5.1). This is a feature of SharkBite pipe only, and not generally applicable to PEX pipe.

## Pipe Flow Characteristics

PIPE SIZE	FLOW RATE (l/min) VS HEAD LOSS (kPa)													
	4l/min	8l/min	12l/min	16l/min	20l/min	24l/min	28l/min	32l/min	36l/min	40l/min	44l/min	48l/min	52l/min	
16mm	0.59	1.75	3.71	6.33	9.57	-	-	-	-	-	-	-	-	
20mm	0.14	0.52	1.09	1.86	2.82	3.95	5.25	6.72	-	-	-	-	-	
25mm	0.05	0.17	0.36	0.61	0.92	1.29	1.71	2.19	2.73	3.32	3.96	4.65	5.49	



16mm PEX	
Velocity	Flow Rate
1.0m/s	6.6l/min
2.0m/s	16.4l/min
3.0m/s	20.0l/min

20mm PEX	
Velocity	Flow Rate
1.0m/s	11.0l/min
2.0m/s	22.1l/min
3.0m/s	33.1l/min

25mm PEX	
Velocity	Flow Rate
1.0m/s	17.5l/min
2.0m/s	35.0l/min
3.0m/s	52.0l/min



### SharkBite Push-To-Connect Plumbing System

The SharkBite fitting works via a two-stage process that ensures a quick, easy connection. In one easy push, the SharkBite fittings advanced design seals and locks the pipe securely.

**Stage ONE** As the pipe is inserted into the fitting, it passes through the release collar and then through the 316-stainless steel grab ring. The grab ring opens out and grabs the pipe, preventing it from being withdrawn.

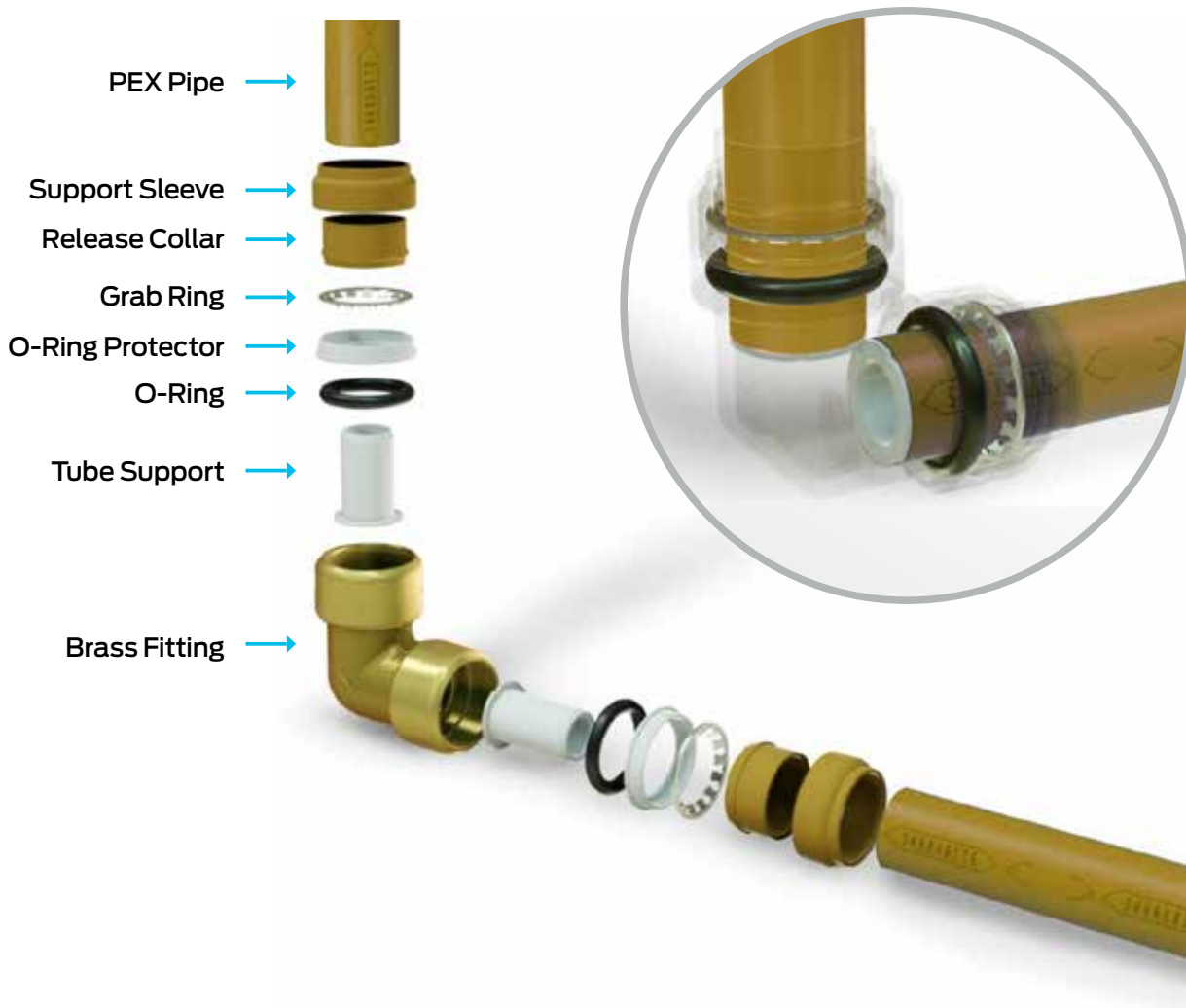
**Stage TWO** The pipe then passes through the O-Ring protector. This aligns the pipe before it passes through the specially formulated EDPM O-Ring which compresses between the pipe OD and the wall of the fitting, creating a seal. When the pipe reaches the tube support stop, a secure joint has been made.

If required, the pipe and fitting can be easily disconnected using SharkBite Disassembly Clips. Simply apply pressure to the release collar. This releases the grab ring teeth, allowing the pipe to be withdrawn from the fitting.

Refer to this manual for detailed connection and disconnection instructions.

SharkBite PEX fittings are designed for use only on SharkBite PEX pipe.

SharkBite copper fittings are designed for use only with copper pipe that conforms with and is approved to AS 1432.



# SharkBite

## How it works



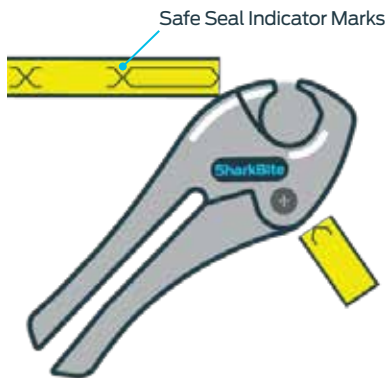
### Connection of PEX Fittings

- Used to connect only SharkBite PEX pipe
- PEX fittings have mustard coloured ends
- Fittings are rotatable after connection
- Fittings can be installed on wet pipe even with water flowing
- Fittings can be disconnected and reconnected as required



### Installation

1. All pipe should be free of damage or debris. Cut PEX pipe with quality PEX cutters. Cutters with blunt or damaged blades may damage the pipe, causing failure.
2. SharkBite PEX pipe is supplied with pre-gauged "Safe Seal Indicator Marks" (SSIM) for faster installation. Cut between the SSIM.
3. Simply push to the next SSIM.



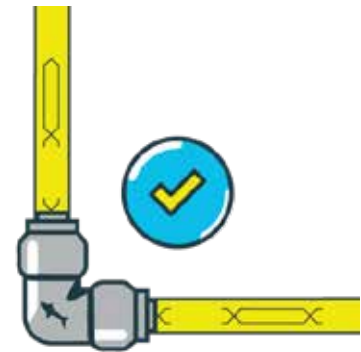
#### Cut

Using SharkBite PEX Pipe Cutters, cut the pipe squarely between two of the SharkBite safe seal indicator marks as shown in the picture. Ensure pipe is round, clean and free of debris.



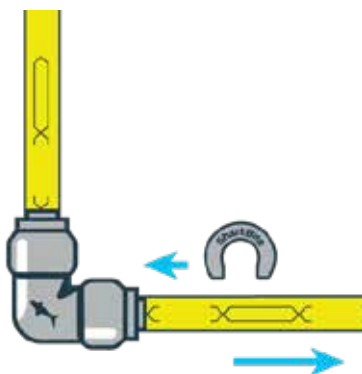
#### Push

Insert the pipe through the release collar to rest against the grab ring. Push the pipe firmly with a twisting action and push to the SharkBite safe seal indicator mark.



#### Done

Ensure the SharkBite Safe Seal Indicator Mark aligns with the release collar as shown.



#### Disassembly

Using the Disassembly Clips, fittings can be easily changed, removed and the fittings reused.

Note: Safety precautions need to be observed when cutting into pipework or disconnecting water meters, fittings and devices on pipework. There have been fatalities and injuries that have been attributed to water services carrying an electrical current.

Any existing metallic service pipework is to be replaced in part or in its entirety by plastics pipe or other non-metallic fittings or couplings, the work should not commence until the earthing requirements have been checked by an electrical contractor and modified, if necessary.

*Installation per AS/NZS 3500*

# SharkBite

## How it works



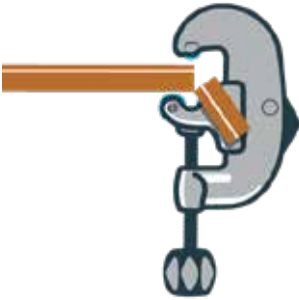
### Connection of Copper Fittings

- Used to connect copper systems
- Copper fittings have black coloured ends
- A range of fittings and adapters are available



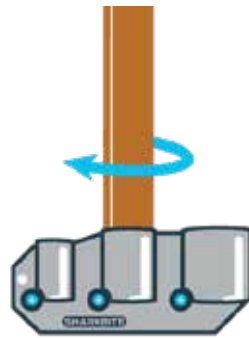
### Installation

1. All pipe should be free of damage or debris. Cut copper pipe with a tube cutter. Do not use a hacksaw, as this will cause damage to the pipe ends.
2. Deburr the end of the pipe using the SharkBite F702 Deburring tool. Be sure to remove any sharp edges that may damage the O-Ring, as this will cause failure.
3. Mark the pipe with a marker, using the SharkBite F702 Gauge to determine the correct insertion depth.
4. Push the pipe into the fitting to the mark made in step 3. The mark should rest against the collar of the fitting, indicating correct insertion depth.



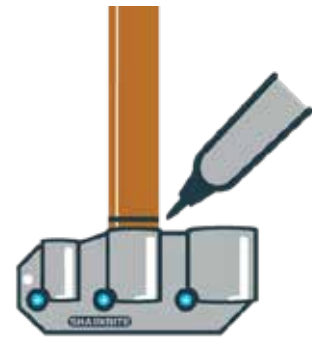
#### Cut

Using a pipe cutter, cut the copper tube to length, making sure the pipe is cut squarely. Ensure pipe is round, clean and free of debris.



#### Deburr

Remove burrs from the pipe using the SharkBite Deburrer and Depth Gauge.



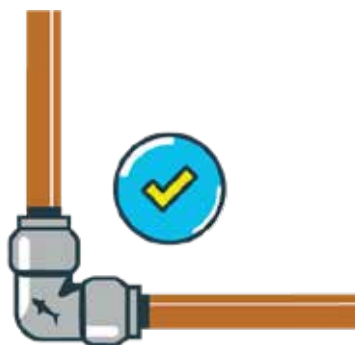
#### Mark

Mark the pipe with a marker using the Depth Gauge.



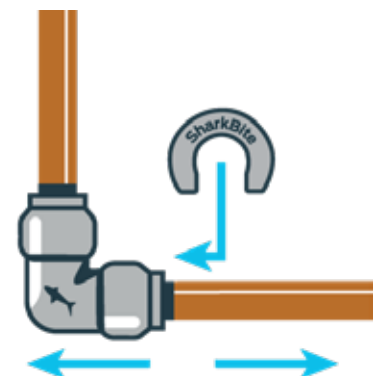
#### Push

Insert the pipe by pushing firmly until a positive click is heard.



#### Done

Ensure the mark made with Depth Gauge aligns with the release collar.



#### Disassembly

Using the Disassembly Clips, fittings can be easily changed, removed and the fittings reused.

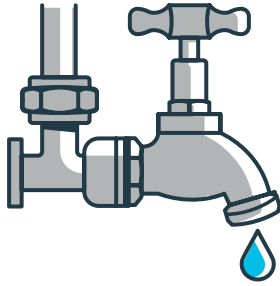
*Installation per AS/NZS 3500*

### Disconnecting Fittings

SharkBite fittings are designed to accommodate simple changes during installation.

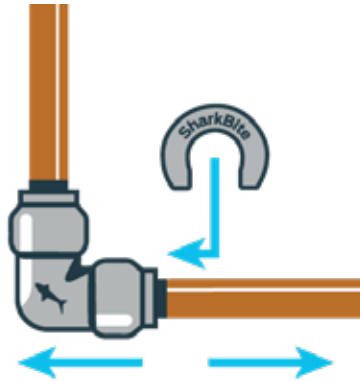
When reusing fittings, ensure the fitting and pipe connection have not been compromised before reinstalling. Visit the Installation Trouble Shooting section for more details.

Additionally, copper tube connected to a SharkBite fitting does not guarantee electrical continuity.



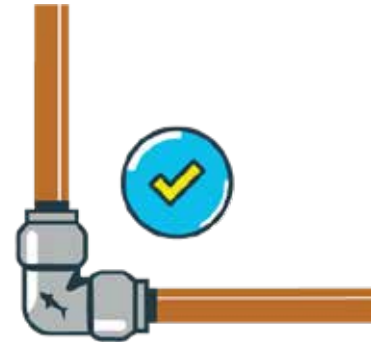
#### Relieve Pressure

Ensure all system pressure has been relieved and drained where possible, although draining is not mandatory. SharkBite can be installed wet or dry.



#### Disconnect

Place the Disconnection Clip over the pipe with the flat face towards the fitting release collar. Apply pressure to the clip against the collar, and with your free hand, remove the pipe.



#### Re-use

Refer to the SharkBite Installation procedure when remaking a joint.

Note: Always recut pipe as damage may have been done during disconnection.

### Use approved SharkBite Disconnection tools

DISCONNECTION CLIPS  
\*Suitable for use on 16mm & 20mm pipes only



### Installation Requirements

Installation is subject to the requirements of the applicable regulatory authority, the National Construction Code Volume Three – Plumbing Code of Australia, associated reference standards as applicable at the time and AS/NZS 3500.

The SharkBite Push-to-Connect Plumbing System is simple and effective when executed in accordance with the joining procedures in this manual. However, if sufficient care is not taken, this can result in an ineffective joint.

SharkBite fittings are not suitable for use on stainless steel pipe.

### Installation Best Practice

- ALL SharkBite O-Rings are pre-lubricated during manufacture, do not apply additional lubrication.
- Cut the pipe square – use SharkBite cutting tools with sharp, undamaged cutting blades to ensure a clean, square cut. Do not use a hacksaw when cutting copper pipe and use the SharkBite Deburring & Gauge Tool to ensure the ends are free from burrs.
- Keep it clean – ensure your SharkBite PEX and fittings are free from building-site contamination such as dirt, sand, sawdust, concrete dust etc.
- To ensure fittings stay clean and the O-Ring is protected from damage, fittings must be kept in their original packaging until immediately prior to installation .
- Push the pipe all the way in – use the Safe Seal Indicator Marks on PEX or the SharkBite Deburring & Gauge Tool as a depth indicator on copper to ensure the pipe has achieved full insertion .
- If the pipe is difficult to insert or will not engage into the fitting do not force the pipe. Remove and check for obstructions inside the fitting and check for damage to the end of the pipe.
- If SharkBite pipe is to be refitted to a SharkBite fitting, it is important to trim the pipe before remaking the joint.
- SharkBite fittings are not to be installed back to back. A minimum distance of 1 Safe Seal Indicator Mark for PEX and 25mm for copper, is required.
- If you are soldering/sweating copper pipe solder/sweat all connections first then make the SharkBite connections – Do NOT solder next to SharkBite connection.
- SharkBite copper fittings may be used on annealed copper tube, however, achieving a watertight connection may be difficult. Using an alternate connection method may be more suitable.
- Always pressure test with water on completion and before covering the pipe.
- Always look for the shark – beware of imitators, you can tell genuine SharkBite fittings from the embossed shark icon on the body of the fitting.



## Ineffective Joints Most Often Occur When:

- There is debris or foreign matter inside the fitting
- The PEX or copper pipe has not been cut square
- The PEX or copper pipe has rough edges, cuts, abrasions or other damage
- The PEX pipe has been cut with blunt or damaged tools
- The copper pipe has been cut with a hack-saw
- Correct pipe insertion depth has not been achieved



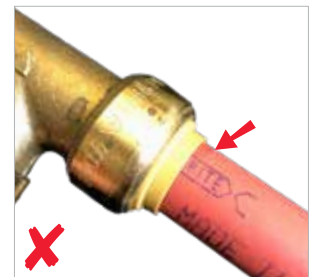
Cutting tool  
damaged



Dirt/debris inside  
fitting



Pipe has not been  
cut square



Short engagement  
– pipe not inserted  
correctly

## If an ineffective joint is detected









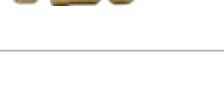










- Disconnect the defective joint and recut the pipe to ensure it is square and free from damage
- Check the fitting is clean and there has been no damage to the grab ring or O-Ring
- Re-install the fitting as per instructions in this manual
- If the joint fails a pressure test, discard fitting and repeat these steps with a new fitting





# SharkBite Fittings

PEX Conversion Fittings are NOT suitable for connection on aluminium multi-layer PEX systems.

Product	System Adaptors	Fitting	Size	Product Code	Image
SharkBite SDR9 PEX to Copper 15-20mm	<ul style="list-style-type: none"> <li>SharkBite Copper – must comply to AS 1432</li> </ul>	Couplings	16mm OD to DN15 Cu	F009	
			20mm OD to DN20 Cu	F017	
		Elbows	16mm OD to 15mm Cu	F250	
			20mm OD to 20mm Cu	F258	
		Tees – Copper Centre	16mm OD to 15mm Cu	F363	
			20mm OD to 20mm Cu	F371	
		Tees – SharkBite Centre	15mm Cu to 16mm OD	F364	
			20mm Cu to 20mm OD	F372	
		Ball Valves	16mm OD to DN15 Cu	BVFRA009	
			20mm OD to DN20 Cu	BVFRA017	
SharkBite SDR9 PEX to SDR7.4 PEX	<ul style="list-style-type: none"> <li>REHAU</li> <li>PexPlus</li> <li>Iplex K2®</li> <li>Forza PEX</li> <li>Tradeplex</li> <li>and others</li> </ul>	Couplings	16mm	F009PX	
			20mm	F017PX	
		Tees – SharkBite Centre	16mm	F364PX	
			20mm	F372PX	
SharkBite SDR9 PEX to Polybutylene	<ul style="list-style-type: none"> <li>Iplex Pro-fit®</li> <li>Buteline</li> <li>Hep20</li> <li>and others</li> </ul>	Couplings	16mm OD to 18mm PB	F009PB	
			20mm OD to 22mm PB	F017PB	
		Tees – SharkBite Centre	16mm OD to 18mm PB	F364PB	
			20mm OD to 22mm PB	F372PB	
SharkBite SDR9 PEX to SDR9 PEX	<ul style="list-style-type: none"> <li>Auspex</li> <li>and others</li> </ul>	Couplings	16mm OD to 16mm SDR9	F009AP	
			20mm OD x 20mm SDR9	F017AP	

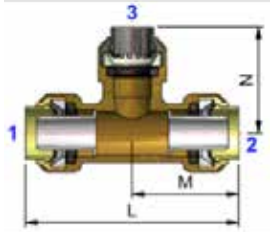
### Conversion Coupling

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
F009	16mm OD	DN15cu	10	58g	49	
F017	20mm OD	DN20cu	10	103g	59	
F009PX	16mm OD SDR9	16mm OD SDR7.4	10	45g	49	
F017PX	20mm OD SDR9	20mm OD SDR7.4	10	103g	59	
F009PB	16mm OD	18mm Poly/Bute	10	45g	49	
F017PB	20mm OD	20mm Poly/Bute	10	103g	59	
F009AP	16mm OD	16mm SDR9 PEX	10	54g	49	
F017AP	20mm OD	20mm SDR9 PEX	10	99g	59	
F061	25mm OD (DN25Cu)	DN20Cu	1	122 g	59	

### Conversion Elbow

Code	End Size		Bag Qty	Weight Each	L	M	Section View
	1	2					
F250	16mm OD	DN15Cu	5	75g	37	34	
F258	20mm OD	DN20Cu	5	120g	40	40	

### Conversion Tee

Code	End Size			Bag Qty	Weight Each	L	M	N	Section View
	1	2	3						
F363	16mm OD	16mm OD	DN15Cu	5	111g	73	37	36	
F364	DN15Cu	DN15Cu	16mm OD	5	121g	73	36	37	
F371	20mm OD	20mm OD	DN20Cu	5	184g	81	40	40	
F372	DN20Cu	DN20Cu	20mm OD	5	101g	81	40	40	
F364PX	16mm SDR7.4	16mm SDR7.4	16mm OD	5	121g	73	37	37	
F372PX	20mm SDR7.4	20mm SDR7.4	20mm OD	5	101g	81	40	40	
F364PB	16mm Polybutylene	16mm Polybutylene	16mm OD	5	111g	73	37	37	
F372PB	20mm Polybutylene	20mm Polybutylene	20mm OD	5	186g	79	40	40	
F417	DN25Cu (25mm OD)	DN25Cu (25mm OD)	DN20Cu	1	244 g	81	40	44	

# PEX Fittings



## Technical Information

- Use SharkBite 25mm PEX Connections for DN25Cu
- All dimensions in mm unless otherwise stated and are for reference only.

### Typical End Details (PEX Fittings)

End Size	D1	L1	Section View
16mm OD	27	24	
20mm OD	32	29	
25mm OD	38	29	

### F1 Straight Coupling

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
F008	16mm OD	16mm OD	10	53 g	49	
F016	20mm OD	20mm OD	10	100 g	59	
F020	25mm OD (DN25Cu)	25mm OD (DN25Cu)	1	170 g	64	

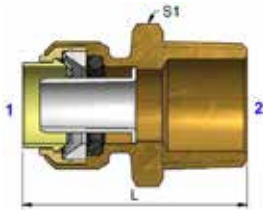
### F1 Reducing Coupling

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
F058	20mm OD	16mm OD	10	83 g	55	
F060	25mm OD (DN25Cu)	20mm OD	1	151g	61	

### F2 Straight Female Connector

Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
F068	16mm OD	RP3/4"-20	5	95 g	47	31.2	
F072	16mm OD	G1/2"	10	62 g	43	25.6	
F088	20mm OD	G3/4"	5	99 g	48	31.2	
F094	25mm OD (DN25Cu)	RPI"-25	1	168 g	55	38.1	

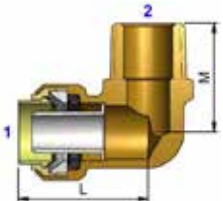
### F3 Straight Male Connector

Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
F116	16mm OD	R3/4"-20	5	93 g	48	31.2	
F120	16mm OD	R1/2"-15	10	73 g	43	25.5	
F134	20mm OD	R3/4"-20	5	96 g	45	31.2	
F138	25mm OD (DN25Cu)	R1/2"-15	5	85 g	44	31.2	
F140	25mm OD (DN25Cu)	R1"-25	1	170 g	54	38.1	
F142	25mm OD (DN25Cu)	R3/4"-20	1	130 g	47	32.4	

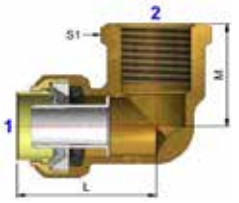
### F12 Elbow

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
F248	16mm OD	16mm OD	10	65 g	37	
F256	20mm OD	20mm OD	10	117 g	40	
F260	25mm OD (DN25Cu)	25mm OD (DN25Cu)	1	263 g	47	

### F13 Male Elbow

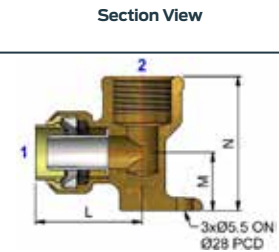
Code	End Size		Bag Qty	Weight Each	L	M	Section View
	1	2					
F280	16mm OD	R1/2"-15	5	97 g	36	31	
F286*	20mm OD	R3/4"-20	5	147 g	41.65	36	

### F14 Female Elbow

Code	End Size		Bag Qty	Weight Each	L	M	S1	Section View
	1	2						
F308	16mm OD	R1/2"-15	5	88 g	36	27	25.6	
F314*	20mm OD	G3/4"	5	155 g	41.65	32.5	31.2	

### F15BP Backplate Female Lugged Elbow

Code	End Size		Bag Qty	Weight Each	L	M	N
	1	2					
F334	16mm OD	G1/2"	5	116 g	35	19	44
F340	20mm OD	G3/4"	5	180 g	42	22	54



### F19BP Backplate Male Lugged Elbow

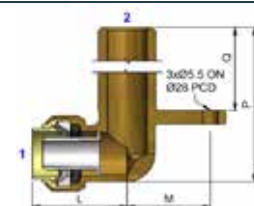
Code	End Size		Bag Qty	Weight Each	L	M	N
	1	2					
F350	16mm OD	G1/2"	10	139 g	35	19	75
F351	16mm OD	G1/2"	5	277 g	35	19	185
F352	16mm OD	G1/2"	5	170 g	35	19	100
F354	20mm OD	*G3/4"	5	420 g	42	22	185
F356	20mm OD	G1/2"	5	174 g	36	22	100
F358	20mm OD	G1/2"	5	274 g	36	22	200
F339-90	20mm OD	*G5/8"	5	208 g	41	22	90
F339-200	20mm OD	*G5/8"	5	309 g	41	22	200



\*Mounting holes 3xØ5.5 ON Ø33 PCD

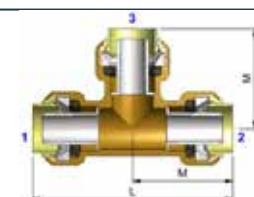
### Top-Plated Male Elbow

Code	End Size		Bag Qty	Weight Each	L	M	P	Q
	1	2						
F336	16mm OD	G1/2"	5	184 g	34	30	100	75
F336-230	16mm OD	G1/2"	5	390 g	34	30	255	230



### F24 Equal Tee

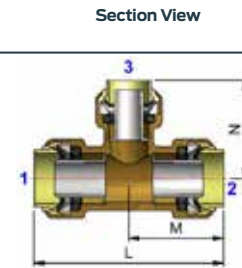
Code	End Size			Bag Qty	Weight Each	L	M
	1	2	3				
F362	16mm OD	16mm OD	16mm OD	10	111 g	73	37
F370	20mm OD	20mm OD	20mm OD	10	190 g	81	40
F374	25mm OD (DN25Cu)	25mm OD (DN25Cu)	25mm OD (DN25Cu)	1	320 g	93	47





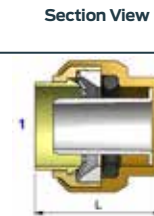
### F25, F26, F27 Unequal Tee

Code	End Size			Bag Qty	Weight Each	L	M	N
	1	2	3					
F412	20mm OD	20mm OD	16mm OD	10	165 g	77	38	40
F416	25mm OD (DN25Cu)	25mm OD (DN25Cu)	20mm OD	1	290 g	86	43	44
F444	20mm OD	16mm OD	20mm OD	10	176 g	79	38	40
F454	20mm OD	16mm OD	16mm OD	10	147 g	75	36	37



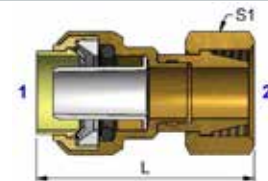
### F61 Stop End

Code	End Size	Bag Qty	Weight Each	L
	1			
F514	16mm OD	10	32 g	26
F518	20mm OD	5	48 g	31
F520	25mm OD (DN25Cu)	1	144 g	35



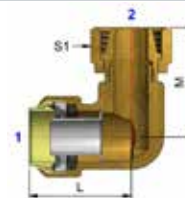
### F62 Straight Tap Connector

Code	End Size		Bag Qty	Weight Each	L	S1
	1	2				
F526	16mm OD	1/2" F NUT	10	75 g	48	27
F530	20mm OD	3/4" F NUT	5	119 g	55	30



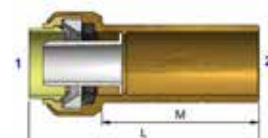
### F63 Bent Tap Connector

Code	End Size		Bag Qty	Weight Each	L	M	S1
	1	2					
F532	16mm OD	1/2" F NUT	10	113 g	40	43	27
F536	20mm OD	3/4" F NUT	5	214 g	34	34	30



### PEX Tail Reducer

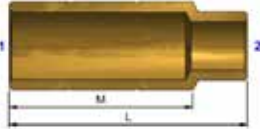
Code	End Size		Bag Qty	Weight Each	L	M
	1	2				
F720	16mm OD	20mm OD TAIL	5	70 g	60	41
F722	16mm OD	25mm OD TAIL	1	94 g	58	39
F724	20mm OD	25mm OD TAIL	1	90 g	57	37



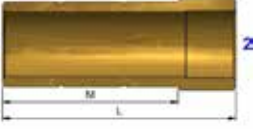
# PEX Fittings

## Technical Information

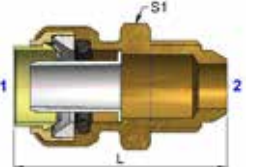
### PEX Tail / Capillary Tail

Code	End Size		Bag Qty	Weight Each	L	M	Section View
	1	2					
F608	16mm OD TAIL	1/2" CAP TAIL	5	33 g	44	34	
F609	20mm OD TAIL	3/4" CAP TAIL	5	55 g	56	39	

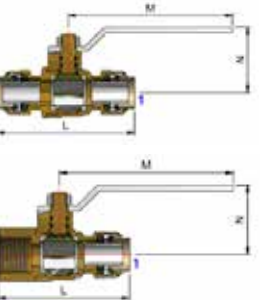
### PEX Tail / Copper Adaptor

Code	End Size		Bag Qty	Weight Each	L	M	Section View
	1	2					
F600	16mm OD TAIL	1/2" Cu	10	32 g	45	34	
F602	16mm OD TAIL	3/4" Cu	5	40 g	51	34	
F604	20mm OD TAIL	1/2" Cu	5	50 g	50	39	
F606	20mm OD TAIL	3/4" Cu	10	54 g	55	39	

### PEX / Flare Adaptor

Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
F610	16mm OD	1/2" M FLARE	10	70 g	48	25.5	
F612	20mm OD	3/4" M FLARE	5	112 g	52	31.2	

### Ball Valves

Code	End Size		Bag Qty	Weight Each	L	M	N	Section View
	1	2						
BVF670	16mm OD	16mm OD	1	306 g	77	92	30	
BVF672	20mm OD	20mm OD	1	500 g	92	105	44	
BVF674	25mm OD (DN25Cu)	25mm OD (DN25Cu)	1	800 g	103	105	48	
BVF680	16mm OD	RP1/2"-15	1	306 g	69	92	38	
BVF682	20mm OD	RP3/4"-20	1	417 g	79	105	48	
BVF684	25mm OD (DN25Cu)	RP1"-25	1	700 g	92	105	48	
BVFRA009*	16mm OD	DN15Cu	1	180 g	77	93.5	49.2	
BVFRA017*	20mm OD	DN20Cu	1	305 g	92	105	48	

# PEX Fittings



## Technical Information

All breach outlets must be supported to restrict movement.

### Manifolds

Code	End Size			Bag Qty	Weight Each	L	Dimensions View
	1	2	3				
F690-3T	20mm OD	20mm OD	16mm OD	1	251 g	40	
F690-4T	20mm OD	20mm OD	16mm OD	1	327 g	40	

### Recessed – Right Angled Breach

Code	End Size			Bag Qty	Weight Each	L	Dimensions View
	1	2	3				
F630	16mm OD	G5/8"	G1/2"	1	515 g	300	
F632	16mm OD	G5/8"	G1/2"	1	480 g	200	

### Shower – Right Angled Breach

Code	End Size		Bag Qty	Weight Each	L	Dimensions View
	1	2				
F650	16mm OD	G5/8"	1	461 g	200	
F652	16mm OD	G5/8"	1	436 g	150	

### Shower – Right Angled Breach (Inverted)

Code	End Size		Bag Qty	Weight Each	L	Dimensions View
	1	2				
F655	16mm OD	G5/8"	1	443 g	200	
F657	16mm OD	G5/8"	1	419 g	150	

# Copper Fittings



## Technical Information

### Typical End Details (Copper Fittings)

End Size	D1	L1	Section View
DN15Cu	23	24	
DN20Cu	31	29	
DN25Cu	38	29	

### No1 Straight Coupling

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
RA008	DN15Cu	DN15Cu	10	45 g	50	
RA016	DN20Cu	DN20Cu	10	85 g	60	

### No1R Reducing Coupling

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
RA058	DN20Cu	DN15Cu	10	71 g	56	
F061	DN25Cu (25mm OD)	DN20Cu	1	122 g	59	

### No2 Female Connector

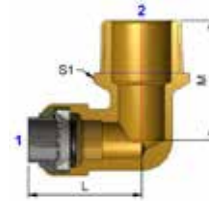
Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
RA072	DN15Cu	R1/2"-15	10	60g	45	25.6	
RA088	DN20Cu	R3/4"-20	5	98 g	51	31.2	

### No3 Male Connector

Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
RA120	DN15Cu	R1/2"-15	10	62 g	45	25.6	
RA134	DN20Cu	R3/4"-20	10	98 g	51	31.2	

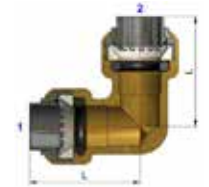
### Hot Water Elbow

Code	End Size		Bag Qty	Weight Each	L	M	S1	Section View
	1	2						
RA380	DN15Cu	R3/4"-20	10	115 g	37	39	28	



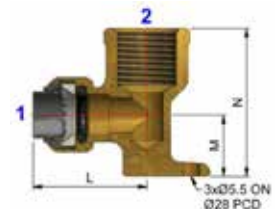
### No12 Elbow

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
RA248	DN15Cu	DN15Cu	10	63 g	34	
RA256	DN20Cu	DN20Cu	10	127 g	41	



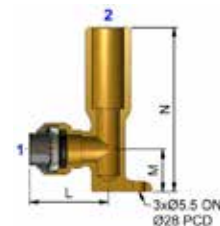
### No15BP Female Lugged Elbow

Code	End Size		Bag Qty	Weight Each	L	M	N	Section View
	1	2						
RA334	DN15Cu	G1/2"	5	109 g	36	19	46	
RA340	DN20Cu	R3/4"	5	165 g	41	22	53	

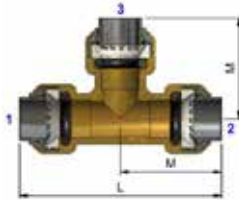


### No19BP Male Lugged Elbow

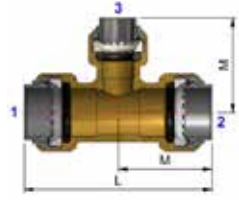
Code	End Size		Bag Qty	Weight Each	L	M	N	Section View
	1	2						
RA350	DN15Cu	G1/2"	10	130 g	35	19	75	
RA351	DN15Cu	G1/2"	5	284 g	35	19	185	
RA352	DN15Cu	G1/2"	5	155 g	35	19	100	



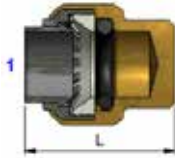
### No24 Equal Tee

Code	End Size			Bag Qty	Weight Each	L	M	Section View
	1	2	3					
RA362	DN15Cu	DN15Cu	DN15Cu	10	87g	68	34	
RA370	DN20Cu	DN20Cu	DN20Cu	10	166 g	83	41	

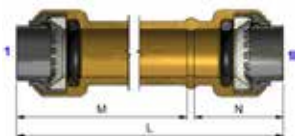
### No25 Unequal Tee

Code	End Size			Bag Qty	Weight Each	L	M	M	Section View
	1	2	3						
RA412	DN20Cu	DN20Cu	DN15Cu	10	134 g	74	37	37	
RA454	DN20Cu	DN15Cu	DN15Cu	10	116 g	71	34	37	
F417	DN25Cu (25mm OD)	DN25Cu (25mm OD)	DN20Cu	1	244 g	81	40	44	

### No61 Stop End

Code	End Size	Bag Qty	Weight Each	L	Section View
	1				
RA514	DN15Cu	10	30 g	29	
RA518	DN20Cu	5	58 g	34	

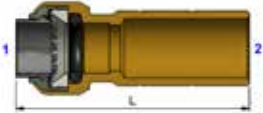
### Slip Coupling

Code	End Size	Bag Qty	Weight Each	L	M	N	Section View
	1						
RA3008	DN15Cu	5	109 g	113	87	24	
RA3016	DN20Cu	5	152 g	113	82	29	

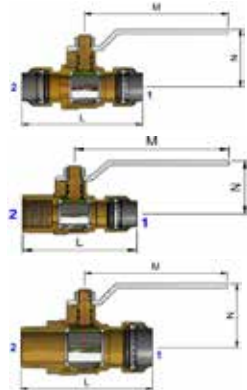
### Flared Compression Adaptor

Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
RA610	DN15Cu	1/2" M FLARE	5	71 g	49	25.6	
RA612	DN20Cu	3/4" M FLARE	5	111 g	53	31.2	

### SharkBite Tail x OD Reducer

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
RA720	DN15Cu	DN20 TAIL	5	53 g	60	

### Ball Valves

Code	End Size		Bag Qty	Weight Each	L	M	N	Section View
	1	2						
BVRA670	DN15Cu	DN15Cu	1	320 g	76	92	38	
BVRA672	DN20Cu	DN20Cu	1	476 g	90	105	44	
BVRA680	DN15Cu	RP1/2"-15	1	260 g	68	92	38	
BVRA682	DN20Cu	RP3/4"-20	1	385 g	77	103	44	
BVRA682M	DN20Cu	R3/4"-20	1	304 g	80	105	44	



# Tempering Valves



## Technical Information

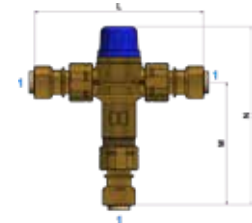
### Insulated Tempering Valves (TV) with SharkBite PEX Fittings

Code	End Size		Bag Qty	Weight Each	L	M	N	Dimensions View
	1	2						
MIXFI1116I	16mm OD	G1/2"	1	760 g	148	71	117	



### Tempering Valves (TV) with SharkBite PEX Fittings

Code	End Size		Bag Qty	Weight Each	L	M	N	Dimensions View
	1	2						
MIXSB16	16mm OD		1	750 g	140	100	146	
MIXSB20	20mm OD		1	850 g	148	106	152	



### Insulated Tempering Valves (TV) with SharkBite Copper Fittings

Code	End Size		Bag Qty	Weight Each	L	M	N	Dimensions View
	1	2						
MIXRA11009I	DN15Cu	G1/2"	1	900 g	148	68	114	
MIXRA11116I	DN15Cu	G1/2"	1	900 g	148	68	114	

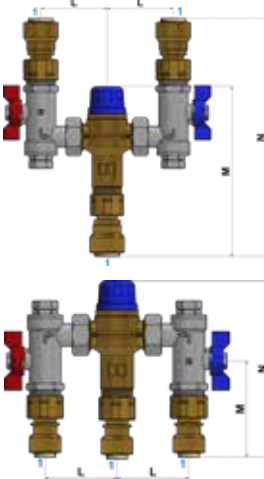


### 4 in 1 Tempering Valves – UP and DOWN

Code	End Size		Bag Qty	Weight Each	L	M	N	Dimensions View
	1	2						
MIX11014U	16mm OD		1	1.4 kg	61	152	210	
MIX11013U	20mm OD		1	1.5 kg	61	156	219	
MIX11014D	16mm OD		1	1.4 kg	61	82	152	
MIX11013D	20mm OD		1	1.5 kg	61	87	156	

MIX11014U

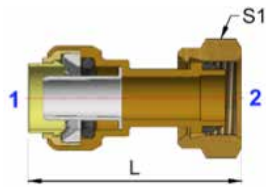
MIX11014D



## Technical Information

SharkBite New Zealand Exclusive Fittings are designed for use with New Zealand plumbing standards and are not available in other countries.

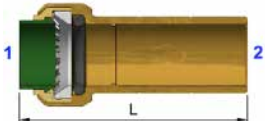
### Straight Swivel

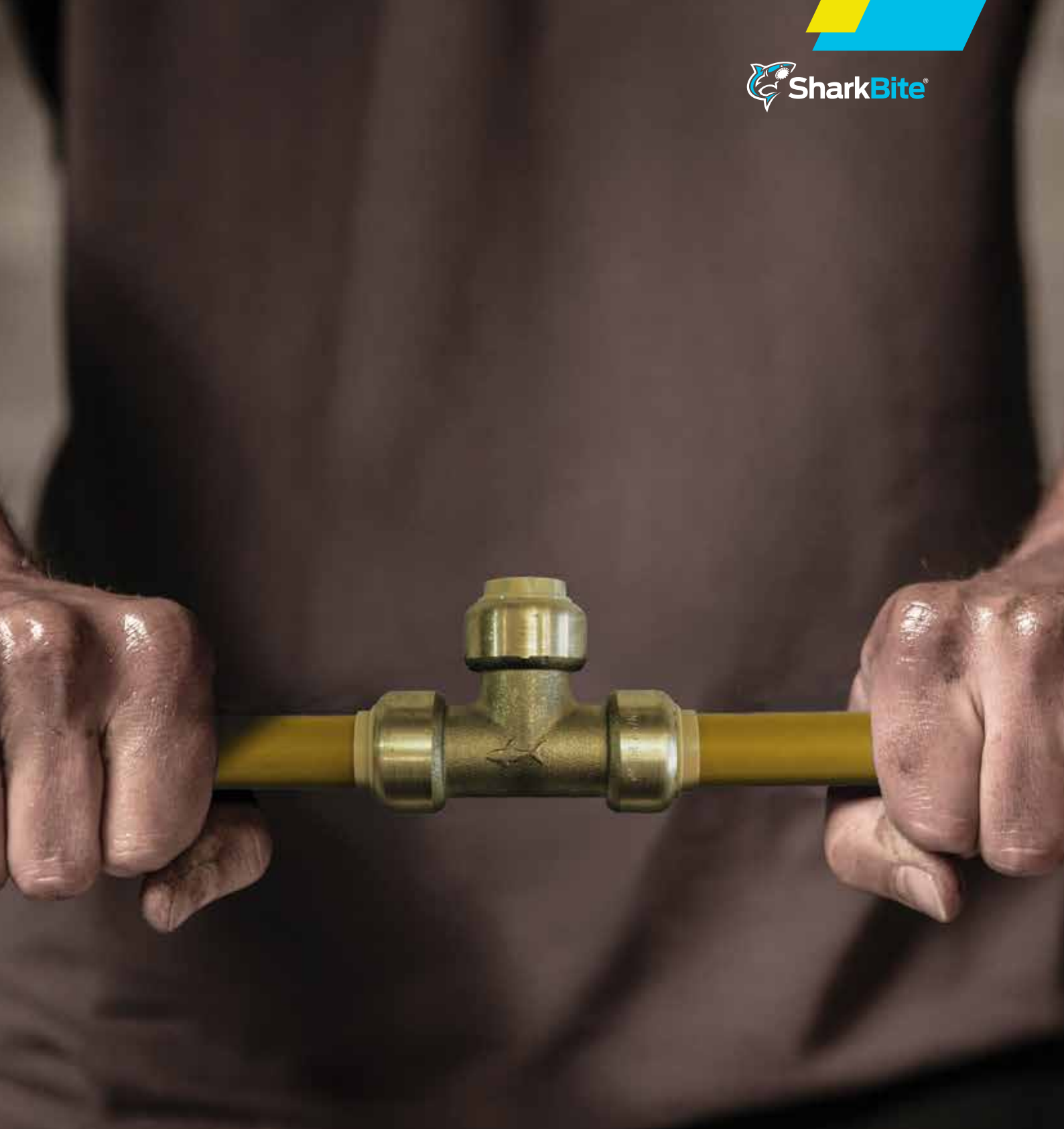
Code	End Size		Bag Qty	Weight Each	L	S1	Section View
	1	2					
F526NZ	16mmOD	G1/2" F NUT	5	67g	55	27	
F530NZ	20mm OD	G3/4" F NUT	5	111 g	61	32	

### Swivel Elbow

Code	End Size		Bag Qty	Weight Each	L	M	S1	Section View
	1	2						
F532NZ	16mm OD	G1/2" F NUT	5	84 g	31	43	27	
F536NZ	20mm OD	G3/4" F NUT	5	152 g	38	47	32	

### Copper Adaptor

Code	End Size		Bag Qty	Weight Each	L	Section View
	1	2				
F719NZ	1/2" NZ Cu PushFit	16mm OD TAIL	5	60 g	60	
F723NZ	3/4" NZ Cu PushFit	20mm OD TAIL	5	95 g	70	



# SharkBite PEX Pipe

### Potable Water (Mustard)

Code	Size	Length	Weight PEX Pipe Per Metre	Weight PEX Pipe With Water Per Metre
XF860	16mm OD	5m Straight	0.09 kg	0.20kg
XF864	16mm OD	50m Coil	0.09 kg	0.20 kg
XF864100	16mm OD	100m Coil	0.09 kg	0.20kg
XF870	20mm OD	5m Straight	0.13 kg	0.31kg
XF874	20mm OD	50m Coil	0.13 kg	0.31kg
XF874100	20mm OD	100m Coil	0.20 kg	0.48kg
XF880	25mm OD	5m Straight	0.20 kg	0.48kg
XF882	25mm OD	25m Coil	0.20 kg	0.48kg



### Hot Water (Red)

Code	Size	Length	Weight PEX Pipe Per Metre	Weight PEX Pipe With Water Per Metre
XF860R	16mm OD	5m Straight	0.09 kg	0.20kg
XF864R	16mm OD	50m Coil	0.09 kg	0.20kg
XF870R	20mm OD	5m Straight	0.13 kg	0.31kg
XF874R	20mm OD	50m Coil	0.13 kg	0.31kg
XF880R	25mm OD	5m Straight	0.20 kg	0.48kg
XF882R	25mm OD	25m Coil	0.20 kg	0.48kg



### Recycled Water (Purple)

Code	Size	Length	Weight PEX Pipe Per Metre	Weight PEX Pipe With Water Per Metre
XF862L	16mm OD	25m Coil	0.09 kg	0.20kg
XF870L	20mm OD	5m Straight	0.13 kg	0.31kg
XF872L	20mm OD	25m Coil	0.13 kg	0.31kg
XF882L	25mm OD	25m Coil	0.20 kg	0.48kg




### Rain Water (Green)


Code	Size	Length	Weight PEX Pipe Per Metre	Weight PEX Pipe With Water Per Metre
XF860G	16mm OD	5m Straight	0.09 kg	0.20kg
XF862G	16mm OD	25m Coil	0.09 kg	0.20kg
XF870G	20mm OD	5m Straight	0.13 kg	0.31kg
XF872G	20mm OD	50m Coil	0.13 kg	0.31kg
XF880G	25mm OD	5m Straight	0.20 kg	0.48kg
XF882G	25mm OD	25m Coil	0.20 kg	0.48kg




### Pipe in Conduit (Mustard Only)

Code	Length	Weight PEX Pipe Per Metre	Weight PEX Pipe With Water Per Metre	Image
XF863	25m Coil	0.16 kg	0.27kg	
XF873	25m Coil	0.19 kg	0.37kg	

### Foam Pipe Insulation (Red Only)

Code	Size	Length	Weight PEX Pipe Per Metre	Weight PEX Pipe With Water Per Metre	Image
XF862RR3	16mm Pre-insulated PEX R0.3 9mm Wall	25m	0.14 kg	0.25kg	
XF872RR3	20mm Pre-insulated PEX R0.3 9mm Wall	25m	0.19 kg	0.37kg	
XF882RR3	25mm Pre-insulated PEX R0.3 9mm Wall	25m	0.29 kg	0.57kg	
XF862RR8	16mm Pre-insulated PEX R0.8 13mm Wall	25m	0.14 kg	0.25kg	
XF872RR8	20mm Pre-insulated PEX R0.8 13mm Wall	25m	0.19 kg	0.37kg	
XF882RR8	25mm Pre-insulated PEX R0.8 13mm Wall	25m	0.29 kg	0.57kg	

### Corrugated Sleeve (Conduit Only)

Code	Size	Length	Suits Pipe Size	Weight Each	Image
F706	23mm	25m	16mm OD, 20mm OD	1730 g	
F707	29mm	25m	25mm OD	2080 g	


# SharkBite Accessories & Tools



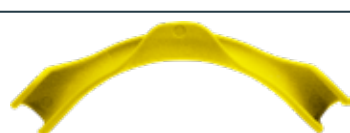
### Tube Clips

Code	Size (D)	Fastener Type	Bag Qty	Weight Each	W	H	Image
F820	16mm OD	TIMBER NAIL	100	7 g	14	20	
F830	20mm OD	TIMBER NAIL	100	9 g	15	25	
F850	25mm OD	TIMBER NAIL	50	45 g	16	35	
F822	16mm OD	MASONRY NAIL	100	7 g	14	20	
F832	20mm OD	MASONRY NAIL	100	9 g	15	25	
F852	25mm OD	MASONRY NAIL	50	40 g	16	35	
F824	16mm OD	TEK SCREW	100	6 g	14	20	
F834	20mm OD	TEK SCREW	100	7 g	15	25	
F854	25mm OD	TEK SCREW	50	11 g	16	35	
F826	16mm OD	CONCRETE ANCHOR	50	7 g	14	20	
F836	20mm OD	CONCRETE ANCHOR	50	8 g	15	20	
F828	16mm OD	METAL STUD	50	6 g	12	20	
F838	20mm OD	METAL STUD	50	7 g	12	30	

### Tube Cutter


Code	Size	Order Qty	Weight Each	Image
F700	16mm OD to 25mm OD (Ratchet)	1	300 g	
F701	16mm OD to 25mm OD	1	165 g	

### Tube Bend Support

Code	Pipe Size	Bend Radius	Bag Qty	Weight Each	Image
F840	16mm OD	R90	10	39 g	
F842	20mm OD	R100	5	78 g	
F844	25mm OD	R200	1	150g	



## Disassembly Clips

Code	Pipe Size	Bag Qty	Weight Each	Image
F710	16mm OD	5	7 g	
F712	20mm OD, DN20Cu	5	12 g	
RA710	DN15Cu	10	3 g	

## Chasing Sleeve & RWC Silicone Burial Wrap

Code	Suites Pipe Size	Coil Length	Bag Qty	Weight Each	Image
F704	16mm OD, 20mm OD	200m	1	2050 g	 <p>F704</p> <p>VC870</p>
VC870	16mm OD, 20mm OD, 25mm OD	50mm x 3m	1	115 g	


## Copper Pipe Deburrer & Depth Gauge

Code	Pipe Size	Bag Qty	Weight Each	Image
F702	DN15, DN20, DN25	1	36 g	

## Pipe De-Coiler

Code	Pipe Size	Bag Qty	Weight Each	Image
UFH034	50m & 100m COILS	1	17 kg	



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